

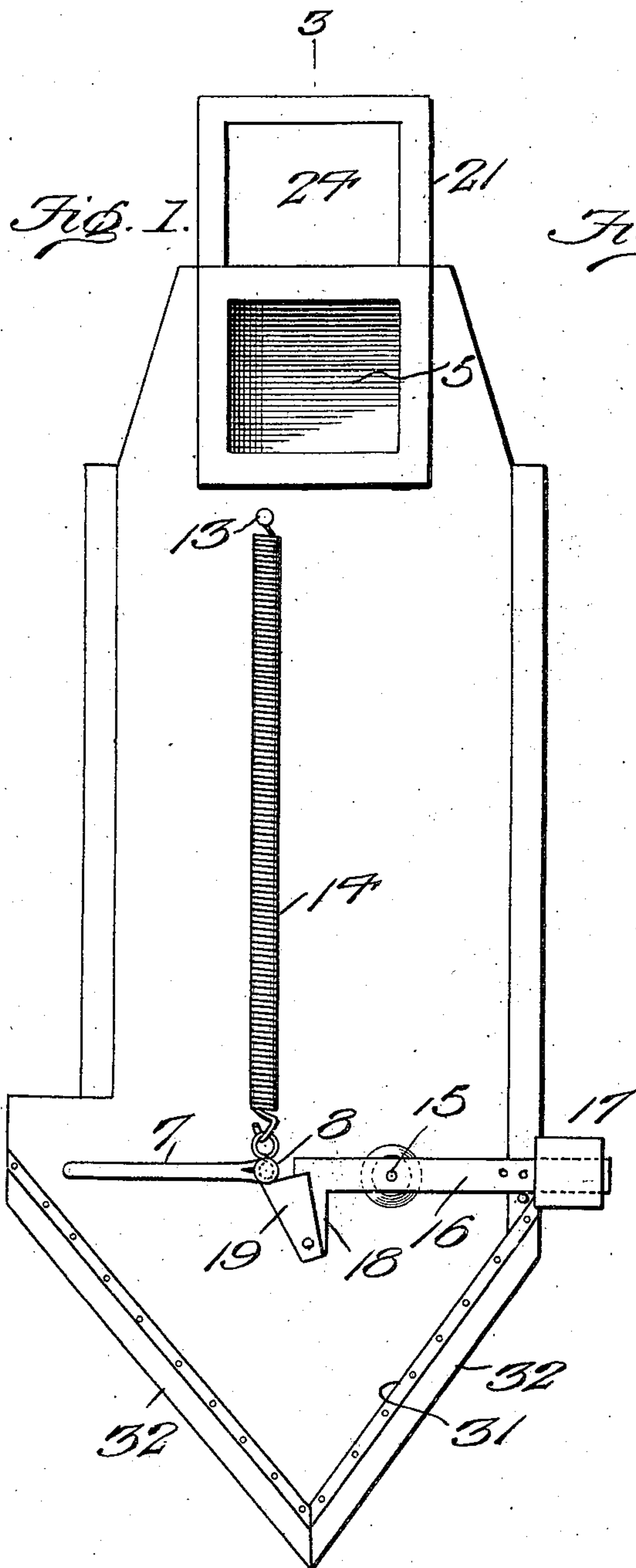
No. 847,162.

PATENTED MAR. 12, 1907.

J. CLEM, JR.
COTTON CLEANER AND DISTRIBUTER.

APPLICATION FILED NOV. 17, 1906.

3 SHEETS—SHEET 1.

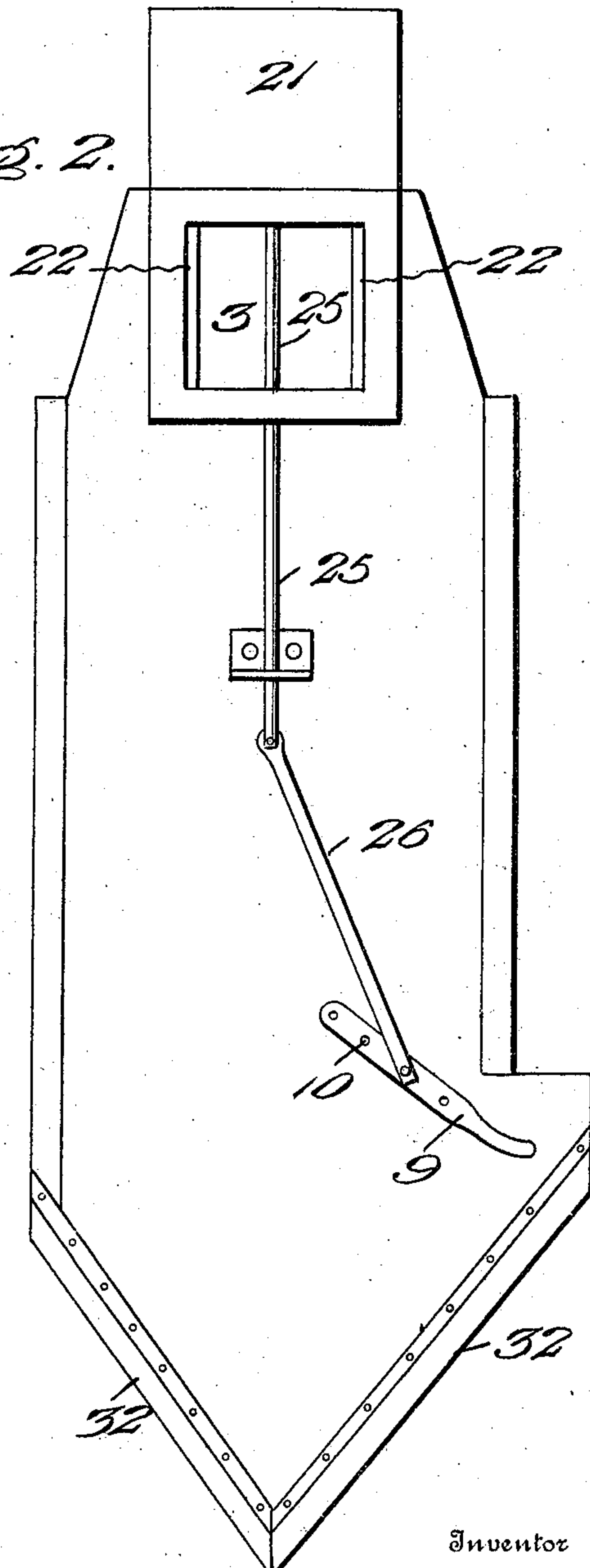


Witnesses

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J. J. Elmore

Fig. 2.



Inventor

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By

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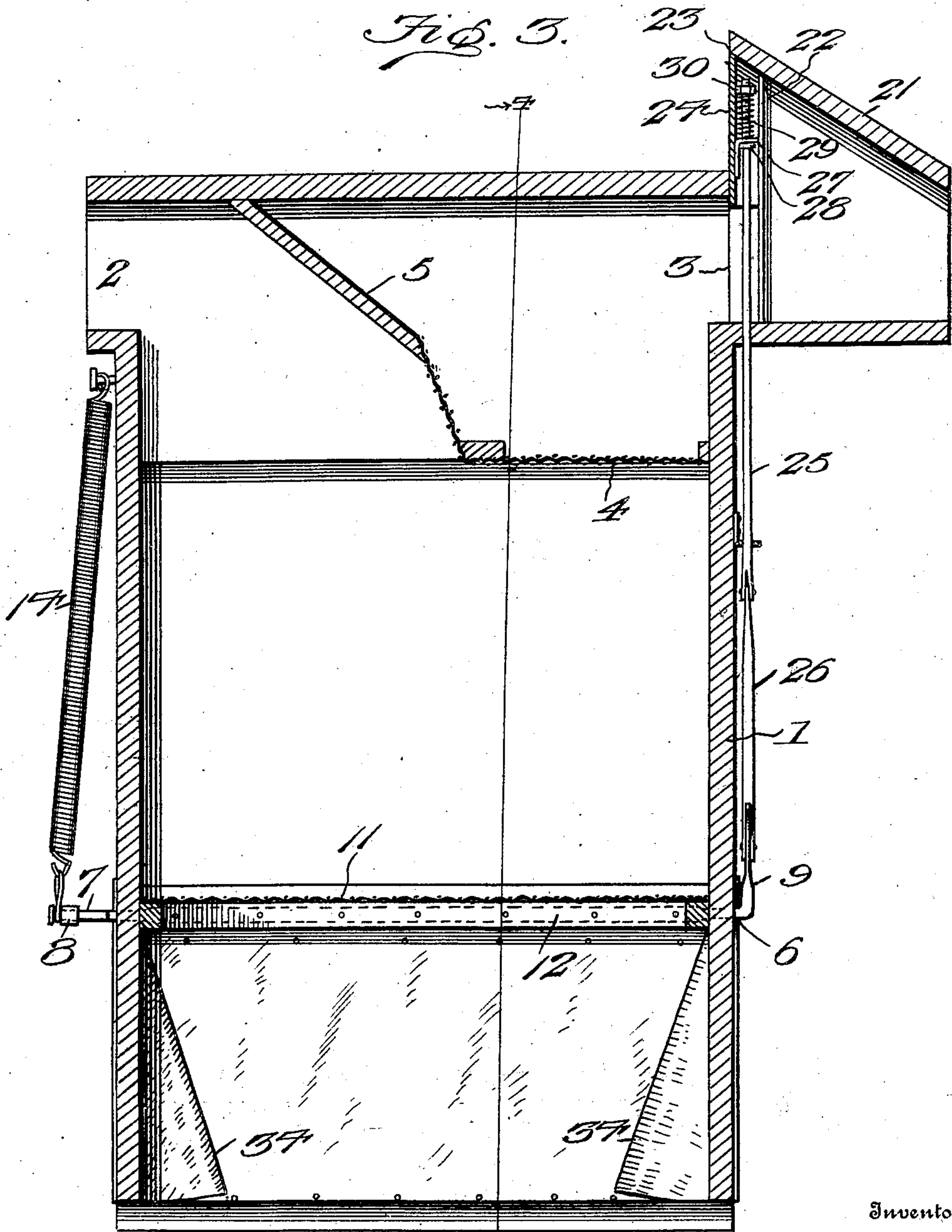
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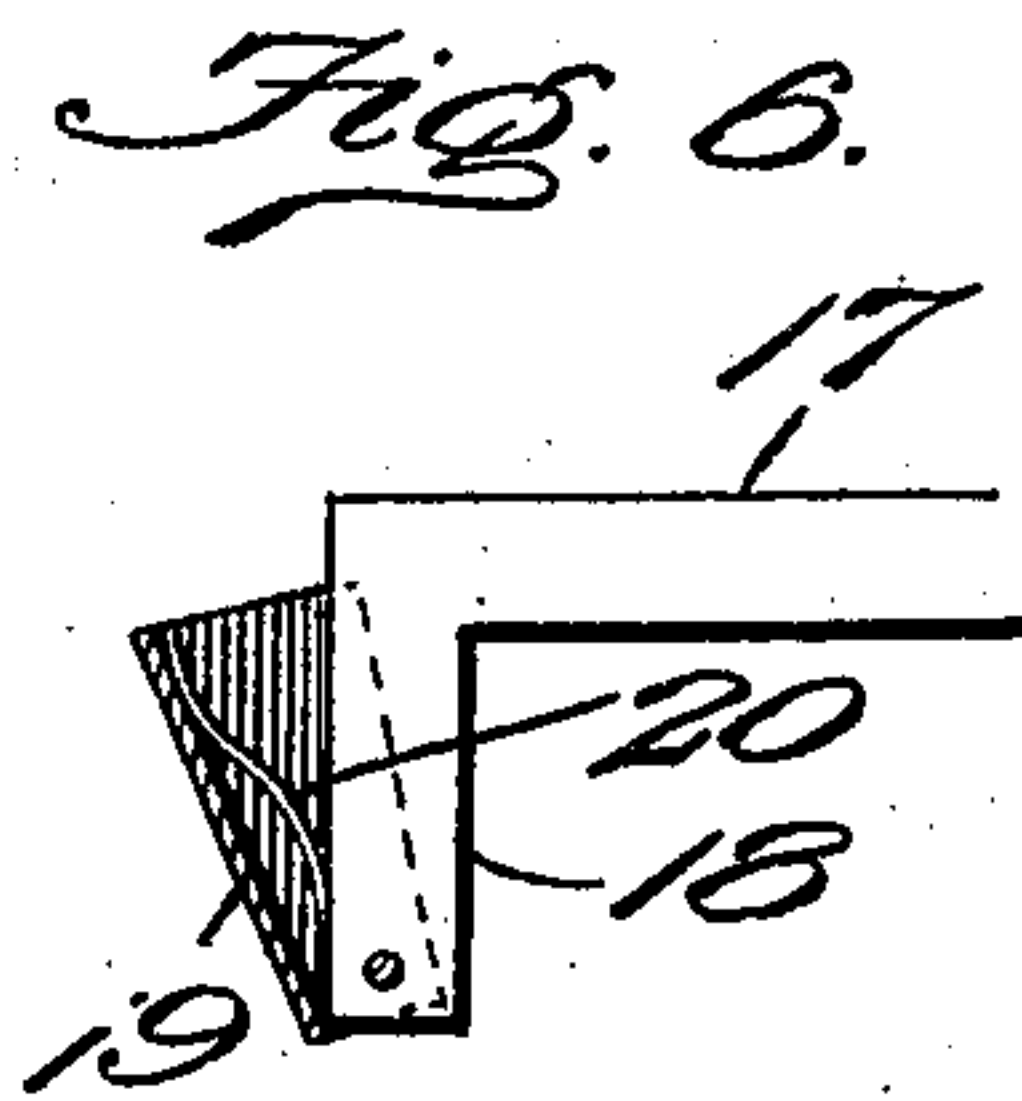
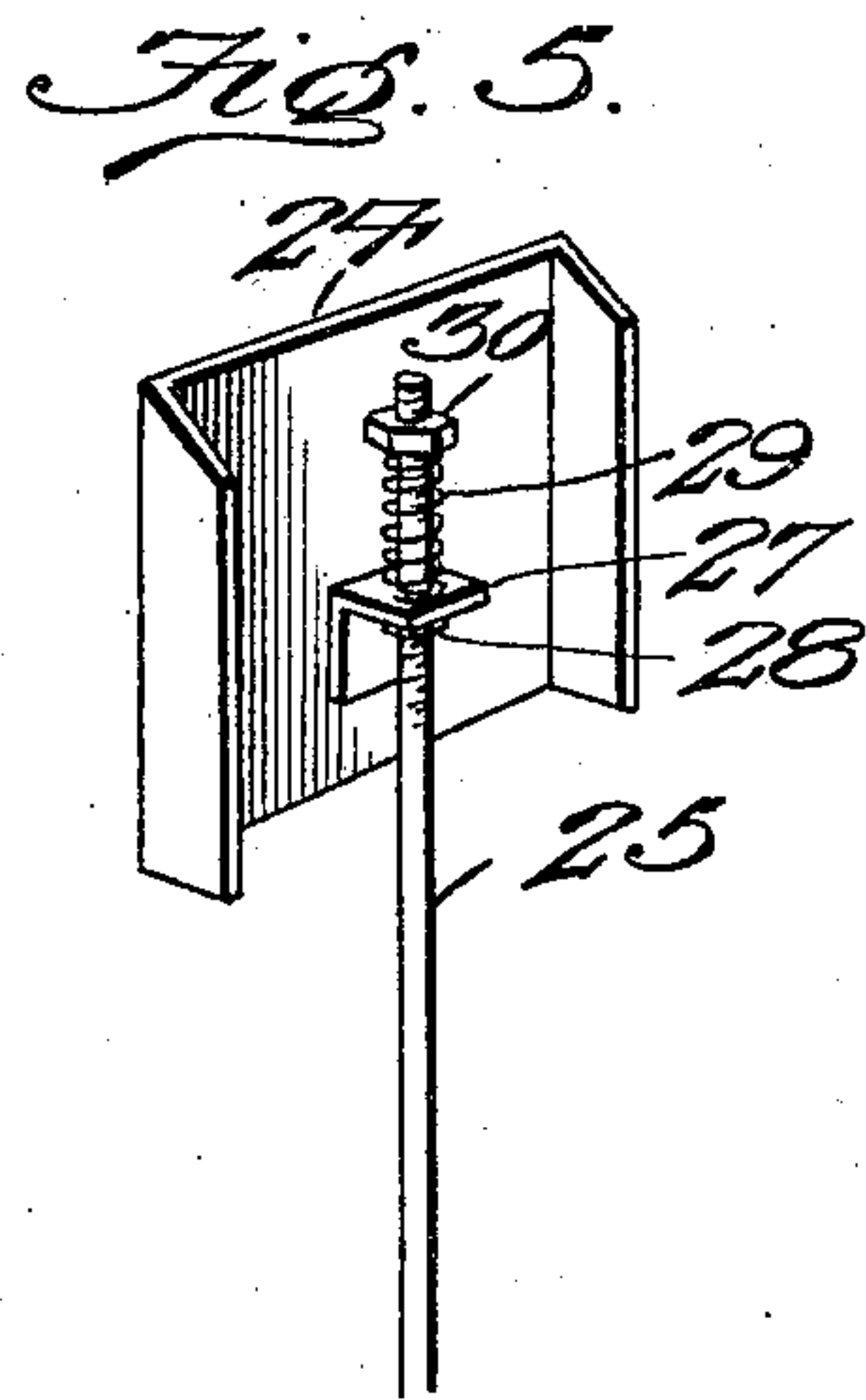
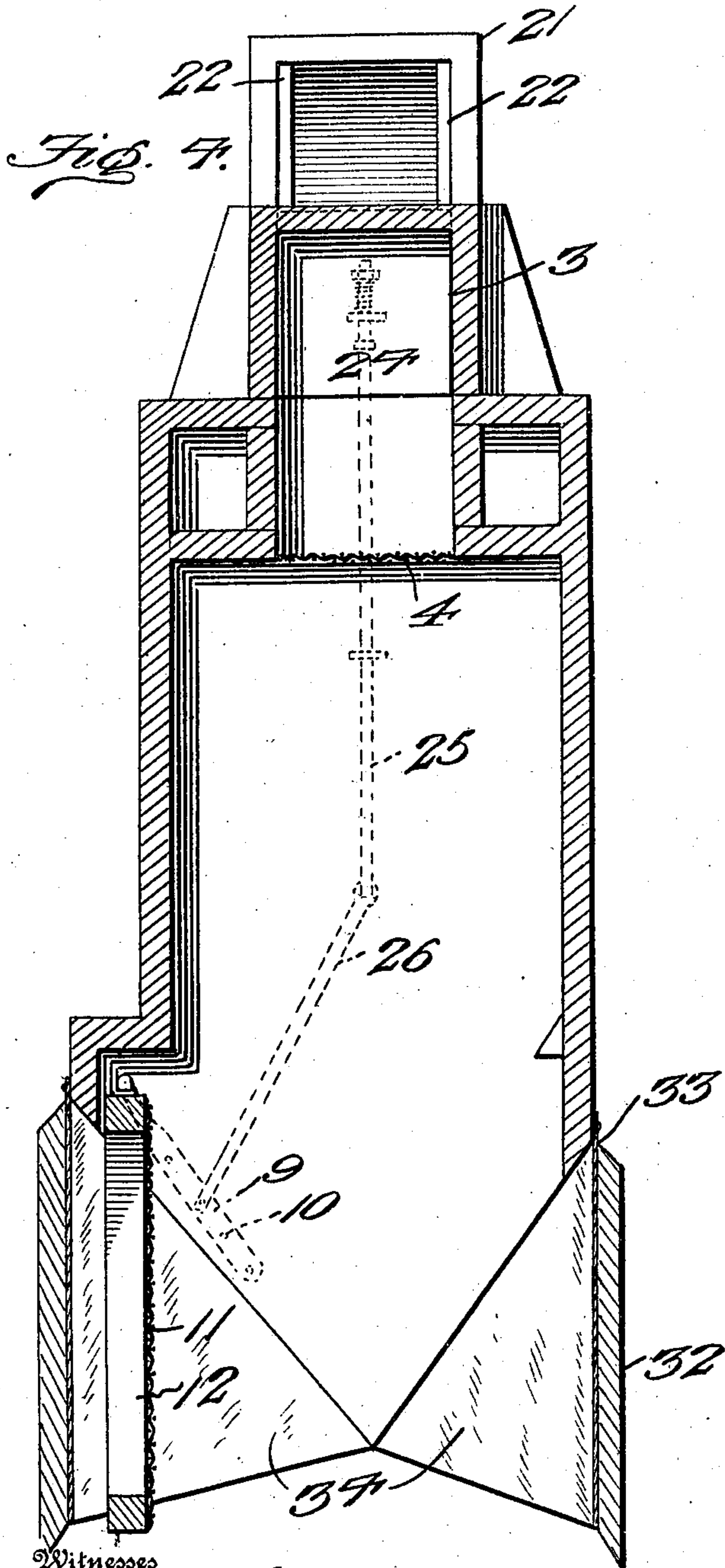
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3 SHEETS—SHEET 3.



Witnesses

Wm. Koeth.
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UNITED STATES PATENT OFFICE.

JOHN CLEM, JR., OF MALVERN, ARKANSAS.

COTTON CLEANER AND DISTRIBUTER.

No. 847,162.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed November 17, 1906. Serial No. 343,885.

To all whom it may concern:

Be it known that I, JOHN CLEM, Jr., a citizen of the United States, residing at Malvern, in the county of Hot Spring and State of Arkansas, have invented new and useful Improvements in Cotton Cleaners and Distributers, of which the following is a specification.

This invention relates to cotton cleaning and distributing devices, and embodies a box or casing having an inlet-port connected with a source of supply and an outlet-port connected with a suction-fan for creating an induced current of air through the casing, together with a perforated tilting table pivoted in the latter and onto which the cleaned material is deposited for final discharge into the underlying gins.

The invention has for its objects to provide a comparatively simple inexpensive device of this character by which the material will be thoroughly cleansed from dust and other impurities, one wherein the table will act automatically to deposit the accumulated material from time to time into the gin, one wherein the current of air will be momentarily cut off during the movement of the table to discharging position, and one in which the cut-off valve and table will be automatically returned to their normal positions.

With these and other objects in view the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a front end elevation of a cleaning and discharging device embodying the invention. Fig. 2 is a rear end elevation of the same. Fig. 3 is a vertical longitudinal section taken on the line 3-3 of Fig. 1. Fig. 4 is a vertical transverse section taken on the line 4-4 of Fig. 3. Fig. 5 is a perspective view of the cut-off valve. Fig. 6 is a detail view of the inner end of the weighted tripping-lever.

Referring to the drawings, 1 designates a box or casing adapted for arrangement over a cotton-gin or other receptacle and having at its upper end an inlet-port 2, which communicates with the source of supply, and an outlet-port 3, connected with a fan or other suction device for creating an induced current of air through the casing, as usual in devices of this character, there being mounted between the ports 2 and 3 and within the casing a perforated shield 4, composed of wire-netting or other suitable reticulated fabric, connected at

its forward end with a downwardly and rearwardly inclined imperforate deflector or baffle-plate 5, fixed on the casing at a point suitably remote from the inner end of the inlet-port 2.

Extended longitudinally through the casing 1 at a point adjacent its lower end is a rotary shaft or pintle 6, having at its forward end a crank-arm 7, terminating in an anti-friction-roller 8 and at its rear end in a crank-arm 9, provided with a plurality of spaced openings 10, there being attached to the shaft and for movement therewith within the casing a downwardly-tilting pivoted collecting-table 11, composed of a sheet of wire-gauze or other reticulated fabric, carried by an open rectangular frame 12 and on which the cleaned cotton or other material accumulates for deposit from time to time into the underlying gin.

Attached at its upper end, as at 13, to the casing and having its lower end engaged with the outer end of the crank-arm 7 is an expandible controlling member or spring 14, which serves to maintain the table 11 normally in horizontal receiving position, while pivoted between its ends, as at 15, to the front end wall of the casing and normally extended in line with the crank-arm 7 is an auxiliary controlling member or lever 16, having a weight 17 adjustably mounted on its outer end and provided at its inner end with a downturned portion or finger 18, to which is pivoted a latching member 19, acted upon and pressed to latching position by means of a spring 20 and adapted for engagement with the roller 8 to hold the lever and crank-arm 7 in normal position.

Provided on the casing 1, leading from the port 3, is a valve-casing in the form of a spout 21, provided on its interior with a pair of guides 22 and having at its rear end an opening 23, adapted to communicate with the external atmosphere at a point above the box 1, there being slidably arranged in the valve-casing a cut-off valve 24, which normally closes the opening 23 and is adapted for movement to a position for closing the port 3 and to be guided in its movements by means of the guides 22.

Slidably arranged on the rear end wall of the casing is a valve-rod 25, connected at its lower end by means of a link 26 with the crank-arm 9 and having its upper end movably engaged with a bearing-ear 27, fixed on the valve, there being coiled on the upper

end of the rod 25, which has a stop-shoulder 28 to contact with the lower face of the ear 27, a compressible spring 29, arranged to engage at its lower end with the ear and at its upper end with an adjustable tensioning-nut 30, tapped on the rod and serving to permit a yieldable downward movement of the rod relative to the valve.

The end walls of the casing terminate at their lower ends in downwardly-converging beveled edges 31, which permit closing movement of a pair of coöperating leaf-valves 32, attached at their upper edges by flexible strips 33 of canvas or other pliable woven fabric, the ends of the valve 32 being connected to the walls of the casing by sheets or webs 34 of pliable material, adapted to permit free movement of the valves and to form continuations of the end walls of the casing when the valves are in open position.

In practice the cotton or other material to be cleaned is drawn through the port 2 into the casing under the action of a draft of air produced by a fan or other suction device connected with the port 3. The material on entering the casing is caught beneath the screen 4, through which the dust or other impurities are drawn, and after a sufficient quantity of material has accumulated on the screen to check or reduce the air-current the accumulated material will fall onto the table 11, upon which it will collect until a quantity of sufficient weight has accumulated to overcome the tension of spring 14 and the gravity or weight 17, whereupon the table will tilt downwardly for discharging the material into the underlying gin. As the table swings downwardly the rod 26 will be actuated, through the medium of crank-arm 9 and link 26, for moving the valve 24 downward for closing the port 3 and at the same time opening the port 23, whereby the current of air through the casing will be momentarily cut off, while at the same time air will be supplied to the fan through the port 23, thus providing for uninterrupted action of the fan. Under normal conditions and while the current of air is being drawn through the casing the valves 32 will be maintained in closed condition, owing to the suction of the air thereon, but will when the air-current is cut off, as heretofore explained, swing automatically to open position, as in Fig. 4, thereby permitting free movement of the table 11 to discharging position for dropping the material into the underlying receptacle or gin.

It will be observed that in the operation of the device the dust and other impurities are drawn through the screen 4 and the material thoroughly cleansed and, further, that the weight of the material accumulated on the table 11 must overcome the tension of the spring 14 and weighted lever 16 for permitting movement of the table to discharging position, while on return movement of the

table the latching member 19 will swing readily to permit passage of the end of the crank-arm 7 and for automatical locking engagement with the latter.

Having thus described my invention, what I claim is—

1. In a device of the class described, a box or casing having inlet and outlet ports, a perforated screen arranged in the casing between said ports, a perforated table pivotally sustained in the casing at a point below the screen and adapted to swing automatically to discharging position, means for automatically returning the table to receiving position and a cut-off valve operatively connected with the table for movement thereby and arranged for opening and closing the outlet.

2. In a device of the class described, a box or casing having inlet and outlet ports, a perforated screen sustained in the casing between said ports, a shaft journaled in the casing and having its ends provided with crank-arms, a perforated table pivotally sustained upon the shaft at a point beneath the screen, a spring connected with one of the crank-arms to act on the shaft for holding the table in receiving position, a movable cut-off valve arranged for closing the outlet-port, and connections between said valve and the other crank-arm adapting the valve for movement with the shaft.

3. In a device of the class described, a box or casing having inlet and outlet ports, a perforated screen sustained in the casing between said ports, a valve-case attached to the casing around the outlet-port and having an air-inlet opening, a cut-off valve movably mounted in the case for normally closing the inlet-opening and adapted for movement to close the outlet-port, a perforated table pivotally sustained in the casing beneath the screen, and operative connections between the table and valve for moving the latter with the table.

4. In a device of the class described, a box or casing having inlet and outlet ports, a perforated screen arranged in the casing between said ports, a valve-case attached to the casing in communication with the outlet port and having an air-inlet opening, a valve movably sustained in the casing for normally closing said opening and adapted for operation to close the outlet-port, a movable receiving-table sustained in the casing at a point beneath the screen and adapted to move automatically to discharging position, and means for automatically operating the valve simultaneously with the movement of the table to discharging position.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN CLEM, JR.

Witnesses:

W. J. THRASHER,
J. E. YOUNG.